Residential EV Rate

Better Buildings by Design 2020

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Net Zero Energy Roadmap

Available on line @ https://burlingtonelectric.com/sites/default/files/inline-files/NetZeroEnergy-Roadmap.pdf

but…

Moving to net zero energy would increase BED's

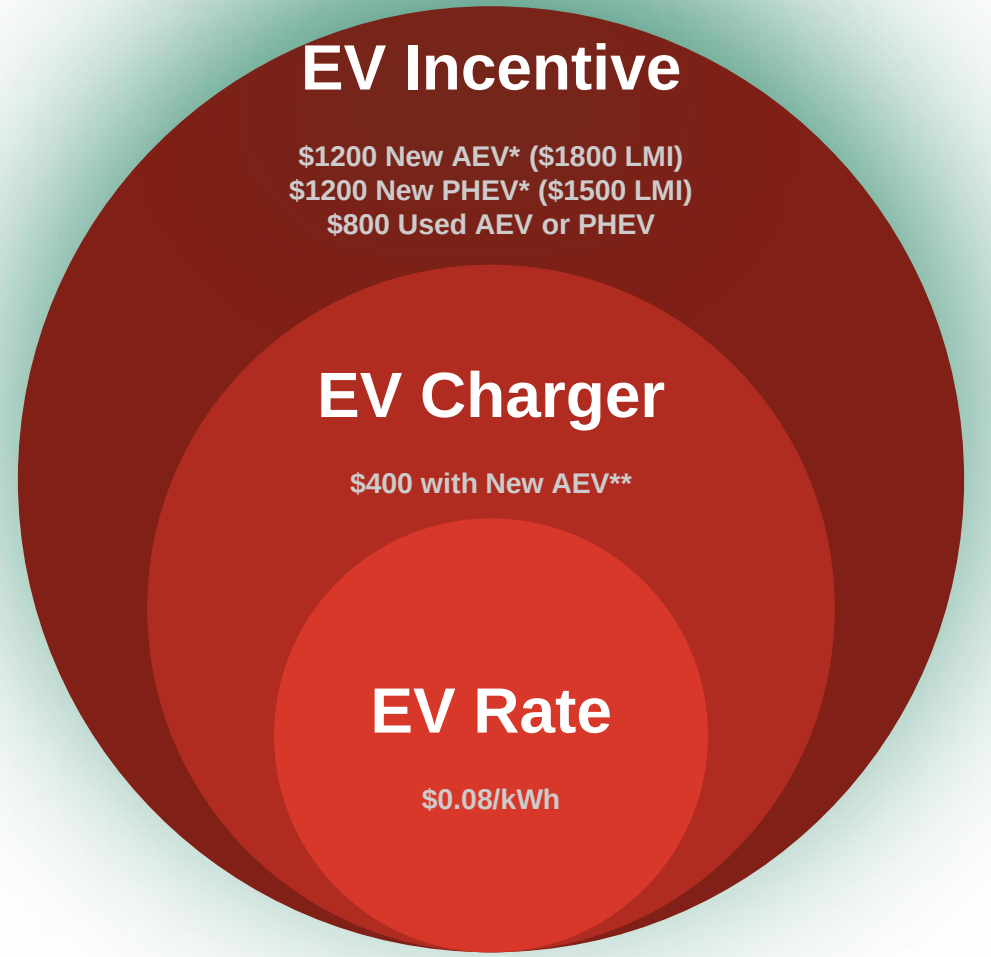
>Peak load from about 65 MW to 140 MW (+115% and move the peak from Summer to Winter).

>Energy sales from about 340,000 MWH to about 561,000 MWH (+65%)

So understanding those new loads and controlling their impacts on the system will be critical….

Electric Vehicle & Charger Incentives

Electric Vehicle and Charger Incentives



* **Note**: EV Incentive is for all-electric vehicles (AEV) and plug-in hybrid electric vehicles (PHEV) with MSRP under $50k, see eligibility for these incentives

** **Note**: All Electric Vehicle does not have MSRP restriction

Peak Impact of EVs

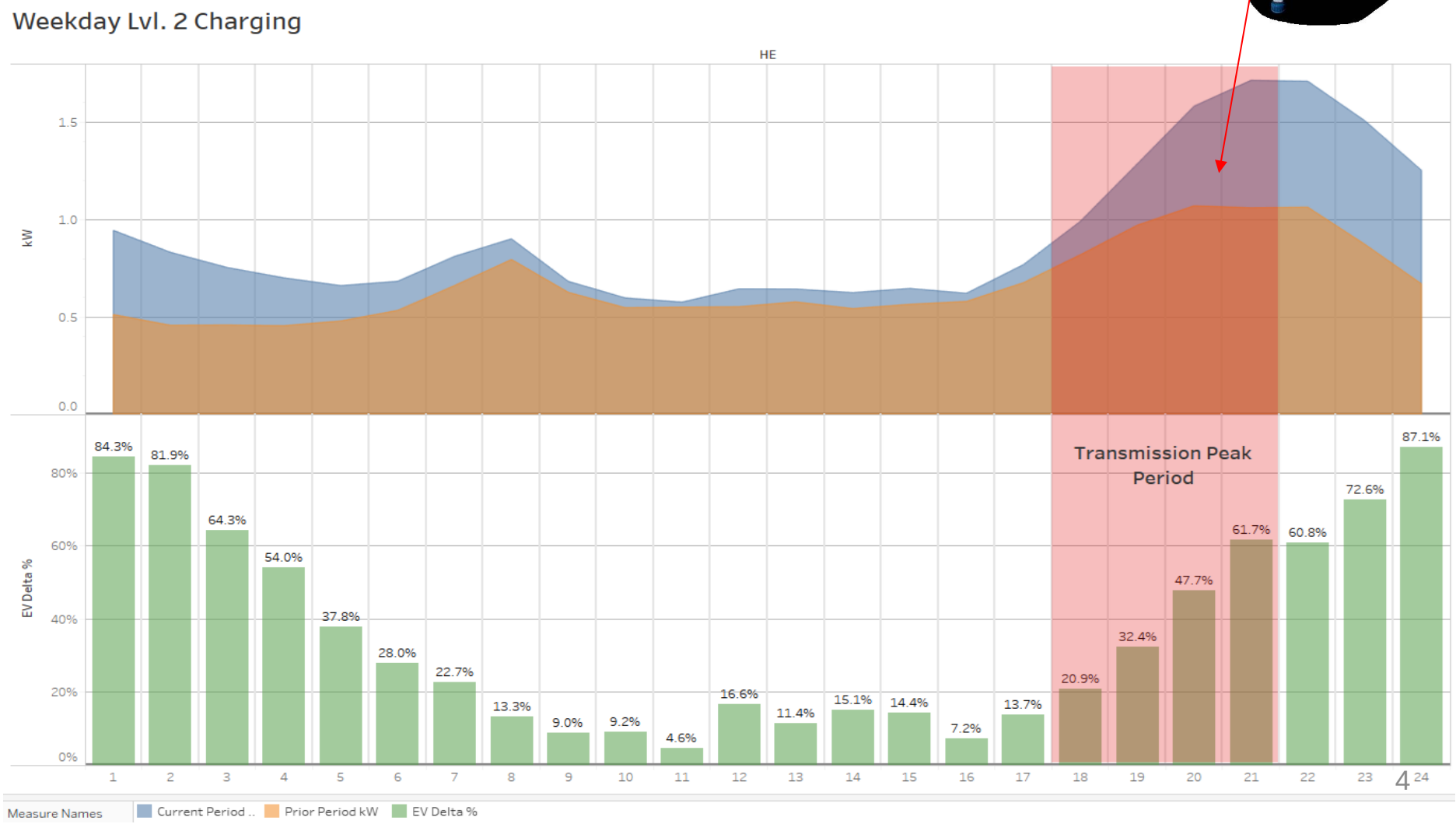
What will it cost to serve this additional load?

Average Load Profile

AMI data for the homes of 18 residential EV owners compared to the previous year:

40% increase in residential customer contribution to transmission peaks

Level 2 charging will exacerbate effect



EV Rate Structure

Residential EV Rate

Eligibility

- BED customers taking service under the RS rate
- Own or lease an all electric or plug-in hybrid electric vehicle
- ***Qualifying EV charger is installed behind the customer meter***
- ***WiFi signal at the location of their EV charger and the BED-approved device(s) (if different)***

Activation/Enrollment

- ChargePoint
- Packetized Energy
- FLO (in process)

Rate Structure

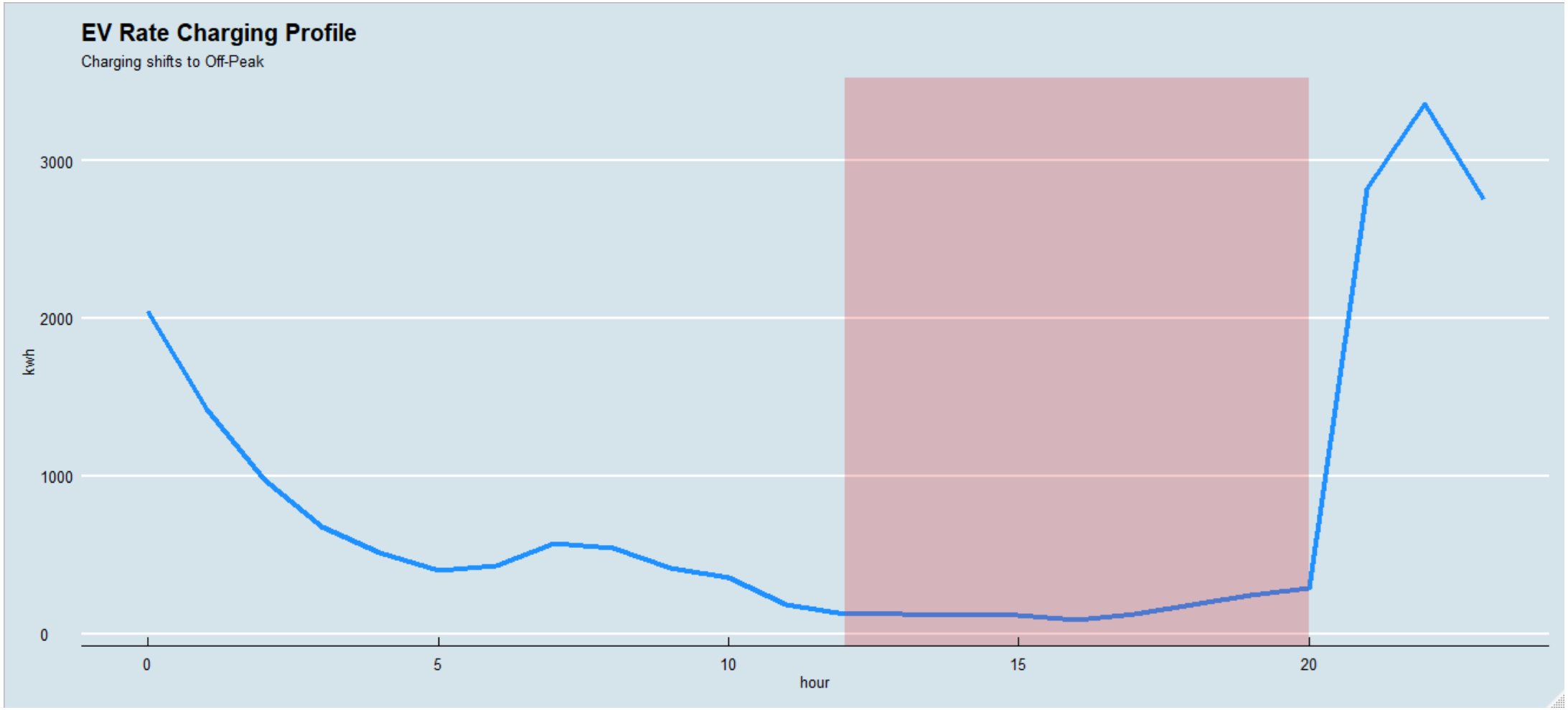
- EV Charging Hours: 10pm to 12pm (noon the following day), 7 days a week, 365 days a year
- EV Charging Credit assessed when **ALL** EV Charging occurs during the hours (above)
  - ***After credit cost of energy for EV charging is $0.08***
- Any charging that occurs outside of these hours removes all credits for the billing period
  - In this case the normal residential energy rate of $0.143775 applies
- Eligibility to accumulate EV Charging Credits resets upon each new billing period

Active Load Control

- Written as an option in the EV Rate Tariff, but not yet activated

Much, much better!

Cumulative use by hour – 18 customers on EV Rate



Multifamily EV Charging

Evmatch Pilot Program

Better Buildings by Design 2020

EV Charging Challenges in Multifamily Housing

What are the barriers for the property owner, residents and Burlington?

Challenges for the Property Owner

- Property Owners are unwilling to invest in expensive commercial charging stations ($5-10k)
- Normal residential chargers would not be able to recover the cost of electricity by charging users for their specific electricity

Challenges for the Resident

- Renters may lack authority and financial incentives to install a personal level 2 charger
- Many of these buildings (particularly apartment buildings) present issues with electrical wiring and capacity

Challenges for Burlington

- Burlington MUDs contain a large percentage of total units (especially +5 Family)
- ~30% of BED's residential accounts turn over each year

Home Type	Count	Percent	Unit Count	Percent of Total Units
1 Family	5,176	53.5%	5,176	30.5%
2 Family	1,041	10.8%	2,082	12.3%
3 Family	369	3.8%	1,113	6.6%
4 Family	239	2.5%	966	5.7%
+5 Family	367	3.8%	4,477	26.4%
Residential Condo	2,156	22.3%	2,308	13.6%
Commercial and Residential	159	1.6%	671	4.0%
Mobile Home	125	1.3%	126	0.7%
Seasonal home	45	0.5%	46	0.3%

How might Evmatch help (MUDs)

Property Owner Features

- Property owner can charge for use of station to help recover investment
- Property owner can differentiate between tenant users and non-tenant users
- Property owner can set public and private hours of availability
- Property owner avoids paying for expensive/excessive commercial charging station*

User/Resident Features

- Removes potential barriers to property owner installing EVSE
- Would not require the EVSE to be connected to the dwelling service
- Can reserve use of charging station via App

*Commercial EV Chargers can range from $3-5k for a single port system

EVmatch / Project

The “Airbnb” of EV Charging

- 16 Level 2 EVSE (1 to DPW) to expand access to charging at Multifamily Unit Dwellings (MUDs)
- EVmatch will provide their financial platform to the owners of these MUDs (Site Hosts)
- Occupants of these MUDs will have access to convenient and faster charging
- Site Host will recover the cost to provide electricity through EVmatch’s app